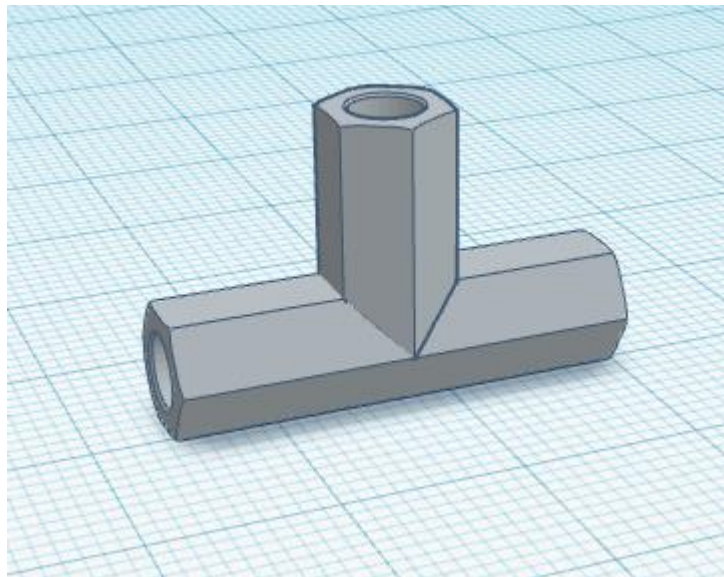


Three-way Standoff

Name: Ernesto Korin, Sergio Martinez

Team number: 9393A

**Location of team: Rockway middle school in
Florida**

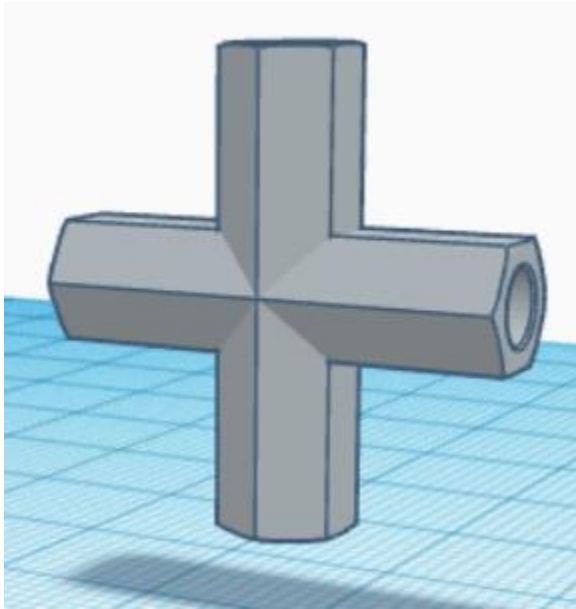


Usage of the piece: This piece is a standoff, but with 3 directions in a T shape. Its functionality would be that in relation to the normal Standoff which can only be used as a straight line to connect something to something else, this Three-way standoff can be used to connect things at angles or 3 things together instead. It would solve the issue of inconveniently not having anything to connect 2 c channels with each other at a 90-degree angle without the pieces being able to overlap on a corner. Areas such as a drivetrain of a robot would be easier to construct in many instances with the usage of the three-way standoff. If it has to be longer, you can attach it to another standoff with a headless screw

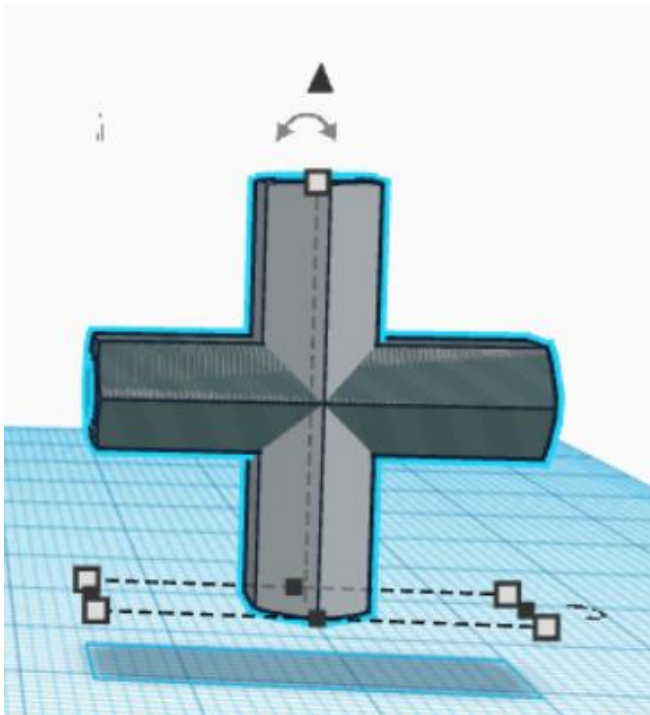
How I made the piece: I made the standoff by downloading a standoff from the vex website and aligning it to make a plus. Then I turned the horizontal standoff into a hole piece and put it in the same position as the one I already had there and grouped it with the vertical standoff. Then after that I removed the remaining part of the standoff under the horizontal standoff with a hole piece. Before making the piece there were other ideas prior. Originally the plan was to make a stand compatible with vex to hold larger projects while they were being built to avoid inconvenience while having to hold something sideways. The other idea was to make a double shaft collar, but I did not choose it since it seemed too low effort, and the problem it fixed was too specific.

Software and features utilized: Tinkercad's version 2019_10_14. The features I utilized were the hole tool, the alignment tool, and the grouping tool. I got the base standoff from Vex's website and converted it from a STEP file to an STL file.

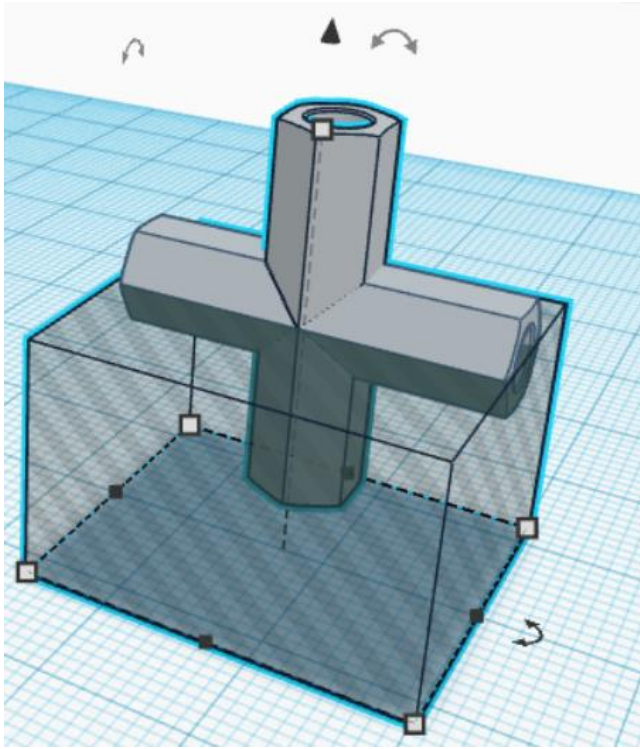
Conclusion: With this project I learned how to properly use the align tool, which before this project I did not know existed, and I sharpened my skills with 3d modeling to the point where I could make this piece or things around the same difficulty comfortably. In my future this knowledge will be useful in areas like aerospace, architectural, and automotive jobs where computer assisted designs are used regularly to test many things.



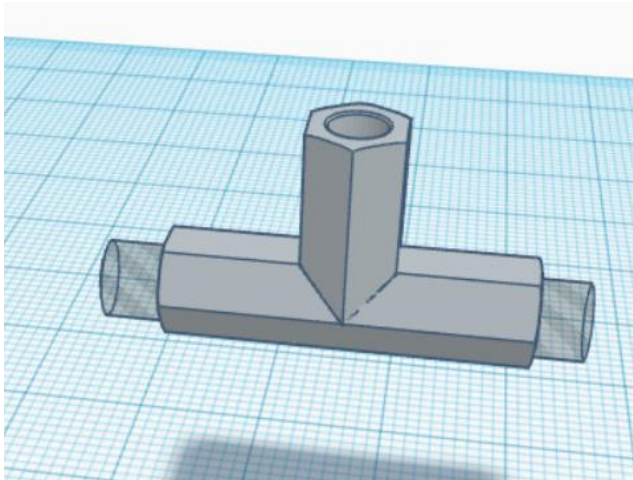
First, I got two standoff and put them in the same spot, then rotated one 90 degrees to make a plus.



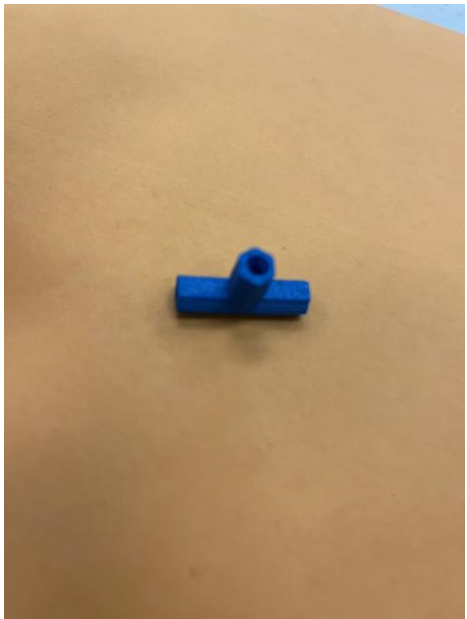
Then I got another standoff made into a hole piece and put it over the horizontal standoff, then I grouped it with the vertical standoff



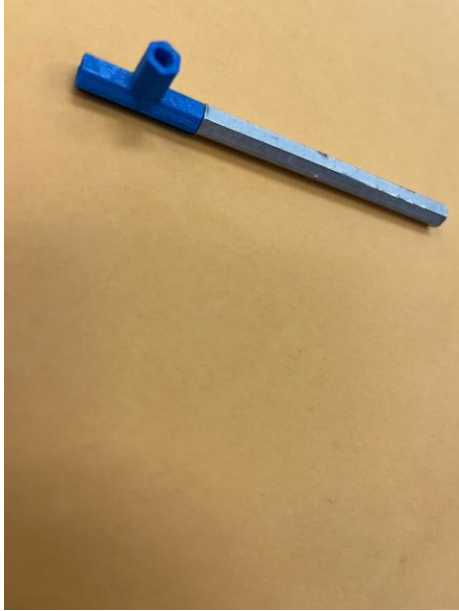
Afterwards I got a block that was a hole piece and placed it over the bottom half of the horizontal standoff and grouped it with the vertical standoff to get rid of the bottom half of the vertical standoff.



The last step that I went through was positioning a cylinder hole piece inside of the interior of the horizontal standoff and grouping it with the vertical standoff to get rid of a remaining floating part in the interior.



These are images of the 3d model after printed, having the base removed, and sanding the bottom



These are images of the piece connected to a normal standoff with a headless screw, to prove that it is compatible with normal pieces.